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Report to the Chairman, Subcommittee on Energy and Power, Committee on Energy and Commerce, House of Representatives

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SYNTHETIC FUELS

Analysis of DOE's Estimate of the Sale Value of the Great Plains Project

GAO/RCED-89-36

GAO

United States
General Accounting Office
Washington, D.C. 20548

Resources, Community, and
Economic Development Division

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October 21, 1988

The Honorable Philip R. Sharp
Chairman, Subcommittee on
Energy and Power
Committee on Energy and Commerce
House of Representatives

Dear Mr. Chairman:

As requested in your August 22, 1988, letter, and in subsequent discussions with your office, we reviewed the proposed sale of the Great Plains coal gasification project to Basin Electric Power Cooperative. The Department of Energy (DOE) has informed the Congress of its intent to sell the project to Basin and has estimated that Basin's offer could have a net present value of about $600 million to the government. As agreed, we (1) analyzed DOE's $600 million estimate, (2) compared the sale value of the project with the initial estimated market value, (3) determined whether DOE implemented the recommendation in our June 1988 report on the project, (4) ascertained how the project's cash reserve fund would be used, and (5) determined the Rural Electrification Administration's (REA) role in approving the sale.

In summary, we found that:

- DOE's $600 million estimate should be reduced by about $397 million, consisting of production tax credits Basin agreed to waive, the project's cash reserve fund, and funds DOE agreed to provide to Basin to establish a new corporation. These exclusions would reduce DOE's estimate of the net present value of Basin's offer to $203 million. Using Wharton Econometrics' and Data Resources, Incorporated's (DRI) current long-term energy price projections and a discount rate that represents current long-term government borrowing costs, we calculated that the net present sale value to the government would be $128 million with Wharton's projections and $284 million with DRI's projections. We also calculated that the present value of the net financial return under continued federal ownership would be a negative $54 million using Wharton's projections and a positive $230 million using DRI's projections.
- Our comparison of Shearson Lehman Hutton's initial estimated market valuation of the project with the net present value of Basin's purchase

offer,[1] using our adjusted DOE estimate and Wharton's and DRI's projections and excluding the potential value of additional by-products, showed that the offer exceeded the initial market value estimate by about $75 million to about $230 million. Many factors could account for the difference, including the economic interest Basin has in the long-term operation of the project, Shearson's use of higher discount rates than we used, and a DOE negotiating position that the sale value should exceed the value of the project under federal ownership. The latter followed a congressional hearing and GAO testimony focusing on the need for DOE to objectively consider the value of the project under federal ownership.

- In accordance with our June 1988 recommendation, DOE considered the financial value of the project under continued federal ownership and the effect of production tax credits on the federal budget in negotiating the sale of the project.
- DOE estimated that the project would have a cash reserve fund of about $150 million as of September 30, 1988. Project revenues, however, were expected to be reduced by about $15 million because of a fire which closed the plant, leaving an estimated balance of about $135 million. DOE has committed $120 million of the reserve, which leaves a balance of $15 million which will be transferred to the U.S. Treasury.
- According to REA officials, Basin cannot use any funds provided by or guaranteed by REA to acquire or operate the project, and REA does not expect the sale to meet criteria set forth in Public Law 100-203 that would necessitate REA's approval of Basin's purchase.

Background

On August 5, 1988, DOE announced at a press conference that it had selected Basin Electric Power Cooperative as the preferred purchaser for the Great Plains project. Basin was one of nine prospective purchasers that submitted firm offers to DOE and one of three finalists with which DOE conducted extensive negotiations. On August 25, 1988, DOE informed the Congress of its intent to enter into a binding contract for the sale of the project to Basin and provided a report on the tentative sale terms and conditions. Section 317 of Public Law 100-202 requires DOE to provide this information at least 30 days before the contract becomes effective.

[1]DOE retained Shearson Lehman Hutton, Incorporated, to assist it in selling the project. To estimate the project's market value, Shearson developed a financial computer model and used its own economic and operating assumptions.

In its report to the Congress, DOE stated that Basin had provided the highest offer and the strongest commitment to long-term operation. DOE also stated that (1) the total value of Basin's offer to the government over the next 21 years could be as high as $1.8 billion, (2) Basin has agreed to continue operations until the year 2009 as long as revenues exceed operating expenses on a cash-on-cash basis, subject to certain limited opportunities to terminate operations, and (3) the federal government would be removed as a direct competitor in the gas production business.

DOE indicated that the $1.8 billion value is in undiscounted dollars (dollars valued at the time they are received). According to DOE, $85 million would be received as Basin's initial cash payment, another $105 million would be returned from the project's cash reserve fund, about $649 million could result from revenue-sharing arrangements, about $590 million would result from the waiver of production tax credits available to the project, and about $367 million might be received as federal income taxes. DOE estimated that the net present value of Basin's offer would be about $600 million. DOE stated that the specific terms and conditions of the sale would be included in a final Asset Purchase Agreement to be negotiated with Basin.

Analysis of Proposed Sale

In calculating the $600 million present value of Basin's offer, DOE included Basin's initial cash payment of $85 million and $30 million from the project's cash reserve fund that would be returned to the government at the time of the sale. DOE also included the present value of (1) production tax credits that Basin waived its right to use (about $300 million), (2) part of the project's cash reserve fund balance that would be available to be used by Basin to defray operating losses and later returned to the government ($52 million), (3) estimated future revenue-sharing payments ($113 million), and (4) estimated future federal income tax payments ($20 million). In estimating revenue-sharing and income tax payments and calculating present values, DOE used energy price projections based on Energy Information Administration forecasts and a 12.5-percent discount rate. We believe that the production tax credits and the project's cash reserve fund should be excluded from the calculation of the sale value.

Adjustments to DOE's Estimated Sale Value

DOE included about $300 million in its present value estimate for production tax credits that Basin has agreed not to use. Although production tax credits should be considered in evaluating and comparing sale proposals from competing prospective buyers, we believe the value of waived tax credits should not be considered as a benefit to the government from selling the project.

In calculating the value of the sale to the government, if the prospective buyer makes an offer that does not waive production tax credits, it is appropriate to reduce the value of the offer for the present value of the credits the prospective buyer can be expected to take. However, if the prospective buyer waives production tax credits, the buyer will make a lower sale offer adjusted for the value of the tax credits that will not be used and no further adjustment is needed in determining the present value of the offer because there would be no increase in the revenue flow to the government.

DOE also included $82 million of the project's cash reserve funds in its present value estimate. It consisted of the $30 million that DOE indicated would be returned to the government at the time of the sale and $52 million representing the present value of the reserve funds that DOE expects Basin to return to the government within 10 years. These funds should not be considered as part of the value of the offer because they already belong to DOE.

Comparison of Sale Value Using Wharton and DRI Energy Price Projections

After excluding production tax credits and project cash reserve funds from DOE's $600 million estimate, we compared the values of the other items in DOE's estimate with our analysis using Wharton's and DRI's 2nd quarter 1988 energy price projections and a discount rate of 9.2 percent (the approximate current interest rate on Treasury bonds with 20 years remaining until maturity). We used Shearson Lehman Hutton's computer model in making our cash-flow analyses (see our methodology section). We also reduced the estimated sale value to account for the capitalization (working capital) funds that DOE has agreed to provide to Basin. In addition, we compared the present value of the sale with the present value of the project under continued federal ownership using the updated energy price projections and discount rate. The results of our analysis are shown in table 1.

Table 1: Comparison of Sale and Retention Values

Dollars in millions

	DOE analysis	GAO analysis using Wharton	GAO analysis using DRI
Basin's initial cash payment	$85	$85	$85
Revenue-sharing payments	113	111	205
Federal income taxes	20	(53)	9
Present value of Basin's offer	**218**	**143**	**299**
Less: Capitalization cost	15	15	15
Net present value	**$203**	**$128**	**$284**
Present value of net cash flow under federal ownership	**$166**	**$(54)**	**$230**

We included federal income taxes because DOE assumed that all profits realized by Basin from operating the project would be taxed at the federal corporate income tax rate and not used to offset other losses. But even with this assumption, the estimates for federal income taxes may overstate the government's net increase in tax revenues from sale of the project because if the project remains under federal ownership, the funds to be invested in the project would likely be invested in some other way that yielded taxable income. However, even reducing federal income taxes to zero would not have a major effect on the results of our analysis.

Our analysis showed that the present value of Basin's offer (covering Basin's initial cash payment, future revenue-sharing payments, and future federal income taxes) would be $218 million using DOE's estimate, $143 million using Wharton's energy price projections, and $299 million using DRI's energy price projections. After reducing these numbers for the capitalization funds ($15 million), the net present value would be $203 million using DOE's estimate, $128 million using Wharton's projections, and $284 million using DRI's projections. In addition, the value of Basin's offer would need to be reduced by the commission that Shearson Lehman Hutton will receive for assisting DOE in selling the project. DOE has not determined the amount of the sale commission.

Comparison of Sale Value With Continued Federal Ownership

We calculated the estimated cash flow of the project from October 1, 1988, over its remaining 21-year operating life under continued federal ownership using Wharton and DRI 2nd quarter 1988 energy price projections. Both Wharton and DRI projections have significantly declined since their 1987 energy price projections. For example, Wharton's projections

have declined by an average of about 32 percent through the year 1999 and by an average of about 10 percent for the 21-year period.

Our cash-flow analysis using Wharton's projections showed that the net undiscounted financial return to the government would be about $597 million. Using a discount rate of 9.2 percent, we calculated that the present value of the $597 million would be a negative $54 million. The value is negative because under present value discounting, the negative cash flows that would occur from 1990 through 2000 with Wharton's projections are weighted more heavily in our calculation than the positive cash flows that would occur after 2000. Using DRI's energy price projections, the net undiscounted financial return to the government under continued federal ownership would be about $1.7 billion, which would have a present value of about $230 million.

Our calculations showed that the net present value of Basin's offer exceeded the project's retention value by about $182 million using Wharton's energy price projections and by about $54 million using DRI's projections.

Comparison of Sale Value With Initial Estimated Market Value

In its May 11, 1987, Marketing Plan for the Great Plains project, Shearson included a discussion of the estimated market value of the project. Shearson's valuation was based on the present value of future cash-flow benefits from private ownership (including the use of production tax credits), the present value of future cash-flow benefits from the development of additional by-products, and the project's estimated cash balance at the time of the sale. After excluding the value of the production tax credits, additional by-products, and project cash balance, we compared Shearson's market value estimate with the net present value of Basin's purchase offer using our adjusted DOE estimate and our calculations based on Wharton and DRI 2nd quarter 1988 energy price projections. The results of our comparisons indicate that Basin's offer exceeded Shearson's market value estimate by about $75 million to about $230 million, even though 1988 long-term energy price projections have declined and interest rates have risen.

The project currently produces three by-products which are sold on the open market. We are unsure if, or the extent that, Basin will develop additional by-products. If Shearson's estimate of the present value of potential additional by-products is considered, the results of our comparisons indicate that Basin's offer would range from about the same as Shearson's market value estimate to about $155 million higher.

Many factors could account for the difference in the initial estimated market value and the value of Basin's purchase offer. For example:

- Basin has an economic interest in the continued long-term operation of the Great Plains project, which might make the project more valuable to Basin than to other potential investors with no similar interest. Basin's Antelope Valley Station power plant is adjacent to the project and supplies electricity to the project; Basin shares certain facilities with the project, including a water supply pipeline, railroad spur, and access road; and Basin has contractual arrangements with the project to share in the coal supplied by the Freedom Mine. Basin stated that its principal reason for pursuing the purchase is to retain control over its own destiny by helping to ensure long-term operation of the project, which will protect revenues and other economies important to achieving continued wholesale electric rate stability.
- Shearson used higher discount rates in its initial market valuation than we used in our analysis of the net present value of Basin's offer using Wharton and DRI energy price projections.
- The Chairman, Subcommittee on Energy and Power, House Committee on Energy and Commerce, held a hearing in April 1988 on DOE's plans to sell the project. In his opening remarks, the Chairman stated concerns about the proposed sale, including the need for (1) the project to remain in long-term operation and not be sold primarily as a tax shelter and (2) DOE to objectively consider the value of the project under continued federal ownership. The hearing focused public attention on the need for DOE to obtain a higher value from selling the project than the value of retaining the project under federal ownership, and DOE considered these congressional and public concerns in negotiating the sale price.
- We testified at the April 1988 hearing on the results of our comparative analyses of retaining and selling the project and also raised concerns about the need for DOE to consider the value of the project under continued federal ownership and the effect of production tax credits in estimating a sale value for the project.[1]

Implementation of Our Recommendation

Following the April 1988 hearing, we issued a report on June 10, 1988,[2] to the Chairman, Subcommittee on Energy and Power, which recommended that DOE, in determining a fair price for the Great Plains project,

[1] Proposed Sale of the Great Plains Coal Gasification Project (GAO/T-RCED-88-34, Apr. 13, 1988).

[2] Synthetic Fuels: Comparative Analyses of Retaining and Selling the Great Plains Project (GAO/RCED-88-172, June 10, 1988).

consider the financial value of the project under continued federal ownership and the effect of production tax credits on the federal budget. DOE implemented our recommendation by using our comparative analyses and making additional economic analyses, including an analysis of net cash flows under continued federal ownership. DOE used these analyses in negotiations with prospective purchasers.

As previously discussed, using Wharton's 2nd quarter 1988 energy price projections, we calculated that the net present value of Basin's offer would be about $128 million, or about $182 million higher than the estimated present value of the net cash flow under continued federal ownership. Using DRI's 2nd quarter 1988 energy price projections, Basin's offer would be valued at about $284 million, or about $54 million higher than if the project were to remain under federal ownership.

DOE stated that in negotiating the sale of the project, it considered the extent to which the final three prospective purchasers would use production tax credits. In its August 5, 1988, decision memorandum, DOE stated that Basin's offer was the best with respect to commitment to long-term operation and waiver of the use of production tax credits. As previously discussed, DOE calculated the production tax credits at about $300 million in present value terms. Basin's waiver, however, does not necessarily constitute any additional value to the government because, if Basin were to receive the tax credits, it probably would have bid a substantially higher price for the Great Plains project.

Use of Project Cash Reserve Fund

The project's cash reserve fund totaled about $140 million as of July 31, 1988, and DOE estimated that it would total $150 million by September 30, 1988. DOE proposed that the funds be used as shown in table 2.

Table 2: Use of Cash Fund

Dollars in millions	
	Total
Reserved for environmental problems	$30
Project reserve trust fund	75
Capitalization of new owner	15
Transferred to U S Treasury	30
Total	**150**
Less our adjustment for decrease in fund due to fire	15
Total available	**$135**

The project has a problem with sulfur emissions, which DOE committed $30 million from the reserve fund to correct.

DOE set up a $75 million project reserve trust fund to support contingencies that could affect economies of operating the plant. Under the proposed terms of the agreement with Basin, for the first 6 years, Basin could borrow from the fund if revenues fall below predetermined production costs specified in the sale agreement, but only as a result of a fall in the price of No. 2 fuel oil causing the shortfall. For the next 4 years, Basin could borrow $25 million from the fund if revenues fall below the predetermined production costs as a result of declines in the price of foreign or domestic natural gas. Basin could also borrow from the fund if any of the four pipeline companies that purchase gas from the project do not make their required payments. At the end of the 10-year period, Basin is required to repay to DOE funds borrowed from the trust fund plus interest. However, Basin is allowed to use revenue-sharing moneys that would normally go to DOE to repay funds borrowed from the trust. At the end of 10 years, the trust fund would be closed and the balance returned to DOE.

Basin intends to set up a new corporation, Dakota Gasification Company, to operate the project, and DOE has agreed to provide $15 million for working capital for the corporation. The $15 million would be provided from the project's cash reserve fund. Basin has agreed to provide $30 million to establish a revolving line of credit that can be used to support the operations of the project through the year 2009.

DOE estimated that the project's cash reserve fund would accumulate to $150 million by September 30, 1988. However, because of a fire that caused the plant to close for about 3 weeks in late July and early August 1988, the ANG Coal Gasification Company, which currently operates the plant, had estimated that the project's cash fund would only be $135 million as of September 30, 1988. Therefore, the project funds transferred to the U.S. Treasury would total about $15 million instead of $30 million.

Possible Consequences of Negative Cash Flows After Sale

Our analysis of the project's estimated net cash flow under the tentative sale terms showed that, with both Wharton and DRI energy price projections, the project's operating expenses could exceed its revenues for about an 11-year period beginning in August 1989. The Energy Information Administration forecasted higher energy prices than both Wharton and DRI through the year 2000, but even at these higher prices DOE's

analysis showed that operating expenses could exceed revenues for 5 years, from 1991 through 1995. If negative cash flows occur and operating losses cannot be offset from accumulated operating income, Basin's $30 million line of credit, and any authorized loans from the project's $75 million reserve trust fund, Basin would be released from its commitment with DOE to continue operating the project and Basin's revenue-sharing payments to the government could be delayed or reduced.

REA Role in Approving Sale

According to REA officials, Basin cannot use any REA direct or guaranteed loans to acquire or operate the Great Plains project or to provide funds for Basin's $30 million line of credit for defraying operating losses. In its August 25, 1988, report to the Congress on the sale, DOE stated that none of the funds used by Basin to purchase the project will be guaranteed or insured by REA or any other government entity.

According to REA officials, under Public Law 100-203, REA is under no obligation to approve or otherwise act on the purchase unless Basin's investment in the project would cause the total amount of Basin's investments and loans that are not related to rural electrification to exceed 15 percent of the value of Basin's total utility plant assets. The REA officials said that although they cannot be certain at this time how Basin will value its investment in the project, they have no reason to believe that prior REA approval of the purchase would be required.

Methodology

In our June 10, 1988, report, we compared the potential cash flow and present value to the government from retaining and selling the Great Plains project. We substituted hypothetical sale prices and economic projections from Wharton and DRI, two recognized economic forecasters, into Shearson's financial computer model of the project to generate net cash-flow and present value calculations. Our work included a review of Shearson's model.

In this report we have used a methodology consistent with our June report. We updated Shearson's model to account for such things as the proposed October 1988 sale date. We used the summer 1988 Wharton and DRI energy price projections and the updated Shearson model to generate net cash-flow and present value calculations related to Basin's offer to purchase the Great Plains project.

Additional information related to our methodology is discussed in relevant sections of this report.

We have discussed a draft of this report with DOE officials and have included their clarifications where appropriate. However, as requested, we did not obtain official agency comments on a draft of this report. As agreed with your office, we are providing copies of this report to the Chairman, Senate Committee on Energy and Natural Resources; other congressional committees and offices; the Secretary of Energy; and other interested parties.

Major contributors to this report are listed in appendix I.

Sincerely yours,

Keith O. Fultz

Keith O. Fultz
Senior Associate Director

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